IN THE CLAIMS

Please cancel claim 37.

Please amend claims 36 and 38-41 as follows:

1. (Previously Presented) An automated method for analyzing substances containing cellular material, the method comprising:

removably receiving at least one consumable cartridge containing at least one potential pharmaceutically active agent into a test apparatus, the test apparatus comprising at least one liquid ejection device including the at least one consumable cartridge and an electronically actuated drop-on-demand printhead acting in fluid communication and electronic communication with the at least one consumable cartridge;

activating the test apparatus to dispense a first defined volume of the at least one potential pharmaceutically active agent from the drop-on-demand printhead of the at least one liquid ejection device, the into contact with at least one defined volume of a substance containing a target cellular material wherein the target cellular material is whole cells or recognized cellular components from intact cells;

capturing and maintaining information, via a memory storage device of the at least one consumable cartridge, pertaining to at least one of a function of the at least one consumable cartridge and the at least one potential pharmaceutically active agent;

detecting in the at least one defined volume of the substance a pharmacological effect on the target cellular material triggered by introduction of the first defined volume of the at least one potential pharmaceutically active agent;

generating information indicative of the pharmacological effect of the at least one potential pharmaceutically active agent on the target cellular material; and

analyzing the generated information to generate a correlation factor regarding the pharmacological effect of the at least one potential pharmaceutically active agent on the target cellular material.

2. (Cancelled)

3. (Previously Presented) The automated method of claim 1, further comprising:

positioning the at least one defined volume of containing the target cellular material on a suitable testing substrate, the positioning step occurring prior to the activation of the test apparatus,

wherein the at least one defined volume of the substance containing the target cellular material is maintained in contact with the suitable testing substrate, the suitable testing substrate having a contact surface which is reactively inert to interaction with the target cellular material under study.

4. (Previously Presented) The automated method of claim 3 wherein the at least one defined volume of the substance containing the target cellular material comprises a plurality of individual volumes, wherein each individual volume is between about 1 and about 500 picoliters and wherein characteristics of the substance containing the target cellular material may vary from individual volume to individual volume.

5. (Previously Presented) The automated method of claim 4 wherein the at least one liquid ejection device dispenses varying quantities of the at least one potential pharmaceutically active agent to contact the individual volume of the substance containing the target cellular material.

6. (Previously Presented) The automated method of claim 4 wherein the at least one liquid ejection device dispenses a quantity of the at least one potential pharmaceutically active agent into contact with selected individual volumes present, the dispensed quantity varying compositionally across the individual volumes of the substance containing the target cellular material.

7. (Previously Presented) The automated method of claim 4 wherein the plurality of individual samples are arranged on the suitable testing surface in an array capable of yielding statistically viable data.

8. (Original) The automated method of claim 7 wherein the individual samples are arranged in a defined two-dimensional array.

9. (Original) The automated method of claim 7 wherein the individual samples are arranged in an interactive linear array.

10. (Previously Presented) The automated method of claim 1 further comprising the step of interactively activating at least one second liquid ejection device in cooperation with an electrically actuated printhead to dispense a second defined volume of a potential pharmaceutically active substance into contact with the at least one defined volume of the substance containing cellular material.

11. – 27.(Cancelled)

28. (Previously Presented) The automated method of claim 1wherein the consumable cartridge comprises control electronics configured to convert received information into control output pertinent to analyzing the generated information.

29. (Cancelled)

30. (Cancelled)

31. (Previously Presented) The automated method of claim 1 further comprising:

upon generation of the correlation factor, altering dispensation of the potential pharmaceutically active material in an iterative manner in subsequent volumes of a substance containing cellular material.

32. (Previously Presented) The method of claim 31 wherein the iterative alteration is a function of ongoing factorial analysis.

33. (Previously Presented) The method of claim 32 wherein each of the plurality of volumes are a range between about 1 picoliter and 500 picoliters.

34. (Previously Presented) The method of claim 33 wherein the first volume is present as a plurality of volumes arranged in a two dimensional array.

35. (Cancelled)

36. (Currently Amended) An automated method for analyzing substances containing cellular material, the method comprising:

removably receiving into a test apparatus at least one liquid ejection device, the at least one liquid ejection device comprising at least one consumable cartridge ~~with the at least one consumable cartridge~~ including at least one chamber containing at least one potential pharmaceutically active agent, a memory storage device, and an electronically actuated drop-on-demand printhead in fluid communication with the at least one chamber;

activating the test apparatus to dispense via the drop-on-demand printhead a first defined volume containing the at least one potential pharmaceutically active agent from the at least one liquid ejection device into contact with at least one defined volume of a substance containing a target cellular material wherein the cellular material is whole cells or recognized cellular components from intact cells;

capturing and maintaining, via the memory storage device of the at least one consumable cartridge, information pertaining to at least one of a function of the at least one consumable cartridge and the at least one potential pharmaceutically active agent contained within the at least one consumable cartridge;

detecting in the at least one defined volume a pharmacological effect on the target cellular material triggered by introduction of the first defined volume of the at least one potential pharmaceutically active agent;

generating information indicative of the pharmacological effect of the at least one potential pharmaceutically active agent on the target cellular material; and

analyzing the generated information to generate a correlation factor regarding the pharmacologic effect of the at least one potential pharmaceutically active agent on the target cellular material.

37. (Canceled)

38. (Currently Amended) The automated method of claim 37 wherein activating the test apparatus comprises:

providing control electronics in the at least one consumable cartridge configured to convert the generated information as part of analyzing the generated information.

39. (Currently Amended) The automated method of claim ~~2~~ 36 wherein activating the test apparatus comprises:

removably associating the at least one chamber ~~cartridge~~ relative to the drop-on-demand printhead.

40. (Currently Amended) The automated method of claim 36 wherein activating the test apparatus comprises:

integrally connecting the at least one chamber to the drop-on-demand printhead as a single, monolithic structure.

41. (Currently Amended) An automated method for analyzing substances containing cellular material, the method comprising:

removably receiving at least one replaceable cartridge containing at least one potential pharmaceutically active agent into a test apparatus, the test apparatus comprising at least one liquid ejection device including the at least one replaceable cartridge and an electronically actuated drop-on-demand printhead acting in fluid communication and electronic communication with the at least one replaceable cartridge;

activating the test apparatus to dispense a first defined volume containing the at least one potential pharmaceutically active agent from the drop-on-demand printhead of the at least one liquid ejection device into contact with at least one defined volume of a substance

containing a target cellular material wherein the target cellular material is whole cells or recognized cellular components from intact cells;

detecting in the at least one defined volume a pharmacological effect on the target cellular material triggered by introduction of the first defined volume of the at least one potential pharmaceutically active agent;

generating a first information indicative of the pharmacological effect of the at least one potential pharmaceutically active agent on the target cellular material; and

dispensing interactively, based upon the generated information, a second defined volume of at least one potential pharmaceutically active agent from the at least one liquid ejection device into contact with the at least one defined volume of the substance containing the target cellular material; and

generating a second information indicative of the pharmacological effect of the second defined volume of at least one potentially pharmaceutically active agent on the target cellular material.

42. (Previously Presented) The method of claim 41 wherein dispensing the second defined volume comprises selecting the at least one potential pharmaceutically active agent of the second defined volume to differ from the at least one potential pharmaceutically active agent of the first defined volume by at least one of a type, concentration, and a quantity of the respective at least one potential pharmaceutically active agents of the first and second defined volumes.

43. (Previously Presented) The method of claim 42 wherein dispensing the first defined volume and dispensing the second defined volume comprises:

dispensing the first defined volume from a first chamber within the at least one replaceable cartridge and the second defined volume from a second chamber within the at least one replaceable cartridge separate from the first chamber.